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NCI Releases Preliminary Data on Genetic Susceptibility for Prostate Cancer

The National Cancer Institute (NCI), part of the National Institutes of Health, has released new data from the Cancer Genetic Markers of Susceptibility (CGEMS) study on prostate cancer. This information could help identify genetic factors that influence the disease and will be integral to the discovery and development of new, targeted therapies. This is also the first public release of a whole genome association study of cancer -- such studies examine the entire genome, with no assumptions about which genetic alterations cause cancer.

"Knowing which genes are most likely to lead to cancer will greatly enhance our ability to diagnosis the disease at its earliest stages, as well as develop therapies to treat cancer when it is most vulnerable to attack," said NCI Director John E. Niederhuber, M.D.

Launched in February 2006, CGEMS is the largest comprehensive initiative to identify genetic risk factors for breast and prostate cancers, which are two of the most frequently diagnosed cancers in the United States. By finding genetic variations that differ in frequency between patient and control groups, researchers can identify the location of multiple inherited genes that increase or decrease the risk of prostate cancer.

"The immediate sharing of this data with scientists in the cancer research community will allow individual researchers to compare existing and developing information with CGEMS data to identify new genes associated with increased prostate cancer risk," said NCI Deputy Director for Advanced Technologies and Strategic Partnerships Anna D. Barker, Ph.D. "The CGEMS

database will provide information we need to develop new strategies for the early detection and prevention of a cancer that takes the lives of nearly 27,000 American men each year."

The genetic samples of prostate cancer came from more than 1,100 men with the disease and 1,100 men who have not developed prostate cancer. The samples include more than 680 million individual genotypes, or genetic markers, including 310,000 genetic variants.

"CGEMS represents one of the first of a new generation of studies made possible by the Human Genome Project," added Gilles Thomas, M.D., Ph.D., lead scientist of CGEMS. "Through immediate sharing of data, we hope to encourage other teams to make similar studies in cancer and other diseases rapidly accessible to speed progress in understanding the inherited causes of cancer."

Prostate cancer is the third-leading cause of cancer-related death in men. In 2006, there will be an estimated 234,460 new prostate cancer cases in the United States.

"NCI is leveraging its resources to make this valuable dataset immediately accessible to all interested scientists," said Stephen Chanock, M.D., director of the NCI Core Genotyping Facility and co-director of CGEMS.

Similar data on breast cancer, the second-leading cause of cancer-related death in women, are now being generated and are anticipated to be released in early 2007. When the data is released, the CGEMS database will contain close to 2.5 billion genotypes. All data from the CGEMS study will be available through NCI's caBIG™ (Cancer Biomedical Informatics Grid™), at http://caIntegrator.nci.nih.gov/cgems/.

"CGEMS represents the best of collaborative science, with geneticists and epidemiologists pooling resources to make publicly available the first database of inherited genetic variants associated with a major cancer," said David Hunter, M.D., an NCI Eminent Scholar who is co-director of CGEMS and professor of cancer prevention at the Harvard School of Public Health.

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For more information on NCI's Cancer Genetic Markers of Susceptibility (CGEMS) initiative, please visit http://cgems.cancer.gov.

For more information about cancer or the National Cancer Institute, please visit the NCI Web site at http://www.cancer.gov or call NCI's Cancer Information Service at 1-800-4 CANCER (1-800-422-6237).